

CIRCULAR MOTION Section 3

GRAVITATIONAL FORCES

- 1) MEASURED IN Newtons
- 2) NON-CONTACT FORCE
- 3) ACCORDING TO Newton's 3rd LAW, there is an equal & OPPOSITE FORCE ON each object.



$$A) F_G = G \frac{m_1 m_2}{d^2} \quad \text{d SQUARED}$$

$$G = \text{GRAVITATIONAL CONSTANT} \\ 6.67 \times 10^{-11} \frac{\text{N m}^2}{\text{kg}^2}$$

m_1 = MASS of object 1

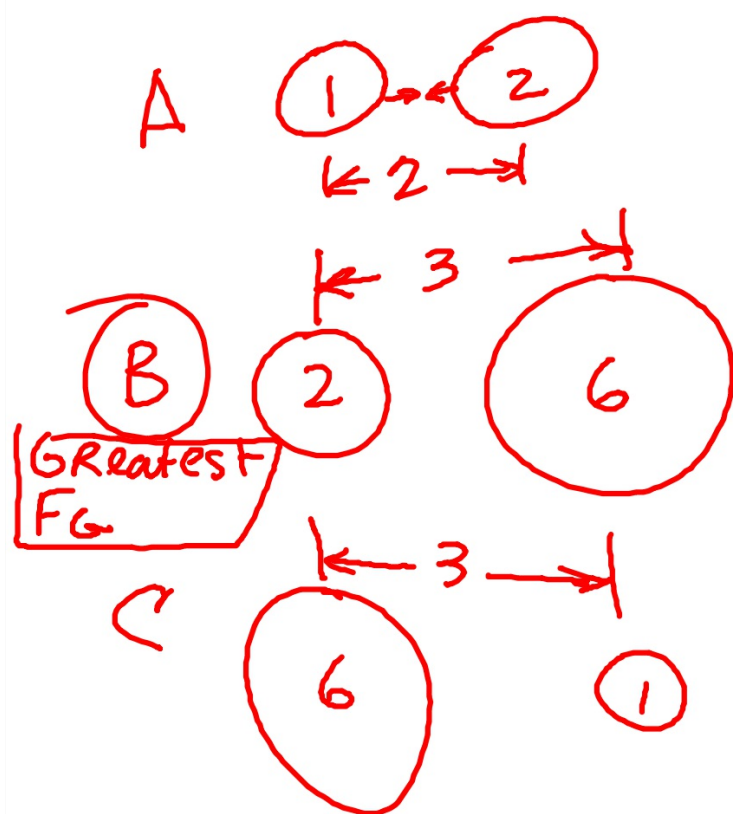
m_2 = MASS of object 2

d = distance between objects

$$F_G \propto \frac{m_1 m_2}{d^2}$$

alpha \rightarrow PROPORTIONAL TO

5) ATTRACTIVE FORCE



$$F_G \propto \frac{m_1 m_2}{d^2}$$

$$\frac{1 \times 2}{2^2} = \frac{2}{4} = .5 \text{ N}$$

$$\frac{2 \times 6}{3^2} = \frac{12}{9} = 1.33 \text{ N}$$

$$\frac{6 \times 1}{3^2} = \frac{6}{9} = .67 \text{ N}$$